

## CLAIMS

1. A processing device comprising:  
2 a processing module capable of multitasking multiple tasks;  
one or more associated circuits, which may be selectively configured  
4 responsive to control signal, coupled to said processing module for supporting  
the processing module; and  
6 a memory storing a control word for configuring the associated circuits,  
wherein each task has an associated control word which is stored in the memory  
8 while the task is being executed by the processing module.

2. The processing device of claim 1 wherein said control word  
2 comprises a plurality of fields.

3. The processing device of claim 2 wherein each of said associated  
2 circuits has an associated field.

4. The processing device of claim 3 wherein each of said associated  
2 circuits has configuration circuitry for configuring the associated circuit  
responsive to a value stored in said associated field.

5. The processing device of claim 4 wherein said configuration  
2 circuitry comprises frequency control circuitry.

6. The processing circuitry of claim 4 wherein said configuration  
2 circuitry comprises voltage selection circuitry.

7. The processing circuitry of claim 4 wherein said configuration  
2 circuitry comprises interface circuitry for selecting one of a plurality of data  
paths.

8. The processing circuitry of claim 4 wherein said configuration  
2 circuitry comprises cache configuration circuitry.

9. The processing device of claim 1 wherein said processing module  
2 includes a plurality of processing subsystems which may be selectively  
configured by said control word.

10. The processing device of claim 1 wherein said processing module is  
2 a microprocessor module.

11. The processing device of claim 1 wherein said processing module is  
2 a digital signal processor.

12. The processing device of claim 1 wherein at least one of said  
2 associated circuits is a caching circuit.

13. The processing device of claim 8 wherein one of said associated  
2 circuits is an interface to the caching circuit.

14. The processing device of claim 1 wherein said processing module  
2 comprises a first processing module, and further comprising one or more  
additional processing modules.

15. A method of operating a processing device including a processing  
2 module capable of multitasking multiple tasks coupled to one or more associated  
circuits, comprising the steps of:

4 identifying a current task; and  
storing a control word associated with said current task in a memory; and  
6 configuring the associated circuits to a state responsive to the control  
word during execution of said current task.

16. The method of claim 15 wherein said storing step comprises the  
2 step of storing a control word having a plurality of predefined fields.

17. The method of claim 16 wherein each of said associated circuits has  
2 an associated field in said control word.

18. The method of claim 17 wherein said enabling or disabling step  
2 comprises the step of configuring each of the associated circuits responsive to a  
value stored in said associated field.

20. The method of claim 19 wherein said configuration step comprises  
2 the step of controlling the frequency of said associated circuitry.

21. The method of claim 19 wherein said configuration step comprises  
2 the step of selecting a voltage.

22. The method of claim 19 wherein said configuration step comprises  
2 the step of selecting one of a plurality of data path configurations to said  
associated circuitry.

23. The method of claim 19 wherein said configuration circuitry  
2 comprises configuring a cache.

24. The method of claim 15 wherein said processing module includes a  
2 plurality of processing subsystems and further comprising the step of  
configuring said processing subsystems responsive to said control word.

25. A processing device comprising:  
2 multiple processing modules each capable of multitasking multiple tasks;  
one or more associated circuits shared between two or more processing  
4 modules, which may be selectively configured responsive to a control signal,  
coupled to said processing modules for supporting the processing module;  
6 multiple memories associated with respective processing modules for  
storing a control word for enabling and disabling the associated circuits, wherein

- 8 each task has an associated control word which is stored in the memory while  
the task is being executed by the processing module.

26. A mobile communications device comprising:
- 2 an antenna for receiving and transmitting signals; and
- receiver/transmitter circuitry for receiving and transmitting audio and
- 4 data signals, said receiver/transmitter circuitry comprising:
- a processing module capable of multitasking multiple tasks;
- 6 one or more associated circuits, which may be selectively
- configured responsive to control signal, coupled to said processing module for
- 8 supporting the processing module; and
- a memory storing a control word for configuring the associated
- 10 circuits, wherein each task has an associated control word which is stored in the  
memory while the task is being executed by the processing module.